IN THE CLAIMS

Claim 1(original): A method of diagnosing or prognosticating a neurodegenerative disease in a subject, or determining whether a subject is at increased risk of developing said disease, comprising:
determining a level and/or an activity of

(i) a transcription product of the ABCA 1 gene, and/or (ii) a translation product of the ABCA 1 gene, and/or
(iii) a fragment, or derivative, or variant of said transcription or translation product,
in a sample from said subject and comparing said level and/or said activity to a reference value representing a known disease or health status, thereby diagnosing or prognosticating said neurodegenerative disease in said subject, or determining whether said subject is at increased risk of developing said neurodegenerative disease.

Claim 2(original): A method of monitoring the progression of a neurodegenerative disease in a subject, comprising:
determining a level and/or an activity of
(i) a transcription product of the ABCA 1 gene, and/or (ii) a translation product of the ABCA 1 gene, and/or
(iii) a fragment, or derivative, or variant of said transcription or translation product,
in a sample from said subject and comparing said level and/or said activity to a reference value representing a known disease or health status, thereby monitoring the progression of said neurodegenerative disease in said subject.

Claim 3(original): A method of evaluating a treatment tor a neurodegenerative disease, comprising:

determining a level and/or an activity of
(i) a transcription product of the ABCA 1 gene, and/or (ii) a translation product of the ABCA 1 gene, and/or (iii) a fragment, or derivative, or variant of said transcription or translation product,
in a sample from a subject being treated for said disease and comparing said level and/or said activity to a reference value representing a known disease or health status, thereby evaluating said treatment for said neurodegenerative disease.

Claim 4(currently amended) The method according to ~~any of claims 1 to 3~~ claim 1 wherein said neurodegenerative disease is Alzheimer's disease.

Claim 5(currently amended): The method according to ~~any of claims 1 to 4~~ claim 1 wherein said sample comprises a cell, or a tissue, or a body fluid, in particular cerebrospinal fluid or blood.

Claim 6(currently amended): The method according to ~~any of claims 1 to 5~~ claim 1 wherein said reference value is that of a level and/or an activity of
(i) a transcription product of the ABCA 1 gene, and/or (ii) a translation product of the ABCA 1 gene, and/or
(iii) a fragment, or derivative, or variant of said transcription or translation product,
in a sampie from a subject not suffering from said neurodegenerative disease.

Claim 7(currently amended): The method according to ~~any of claims 1 to 6~~ claim 1 wherein an alteration in the level and/or activity of a transcription product of the gene coding for ABCA 1 and/or a translation product of the gene coding for ABCA 1 and/or a fragment, or derivative, or variant thereof, in a sample cell, or tissue, or body fluid, in particular cerebrospinal fluid, from said

subject relative to a reference value representing a known health status indicates a diagnosis, or prognosis, or increased risk of Alzheimer's disease in said subject.

Claim 8(original): A kit for diagnosing or prognosticating a neurodegenerative disease, in particular Alzheimer's disease, in a subject, or determining the propensity or predisposition of a subject to develop such a disease by:
detecting in a sample from said subject a varied level, or activity or both said level and said activity of a transcription product and/or of a translation product of the ABCA 1 gene -compared to a reference value representing a known health status; and said kit comprising:
at least one reagent which is selected from the group consisting of

(i) reagents that selectively detect a transcription product of the ABCA 1 gene and
(ii) reagents that selectively detect a translation product of the ABCA 1
gene.

Claim 9(original): A method of treating or preventing a neurodegenerative disease, in particular Alzheimer's disease, in a subject comprising administering to said subject in a therapeutically or prophylactically effective amount an agent or agents which directly or indirectly affect an activity and/or a level of (i) the ABCA 1 gene, and/or
(ii) a transcription product of the ABCA 1 gene, and/or (iii) a translation product of the ABCA 1 gene, and/or (iv) a fragment, or derivative, or variant of (i) to (iii).

Claim 10(original): A modulator of an activity and/or of a level of at least one substance which is selected from the group consisting

of
(i) the ABCA 1 gene, and/or
(ii) a transcription product of the ABCA 1 gene, and/or (iii) a translation product of the ABCA 1 gene, and/or (iv) a fragment, or derivative, or variant of (i) to (iii).

Claim 11(original): A recombinant, non-human animal comprising a non-native gene sequence coding for ABCA 1 or a fragment, or a derivative, or a variant thereof, said animal being obtainable by:
(i) providing a gene targeting construct comprising said gene sequence and a selectable marker sequence, and
(ii) introducing said targeting construct into a stem cell of a non-human animal, and
(iii) introducing said non-human animal stem cell into a non-human embryo,
and
(iv) transplanting said embryo into a pseudopregnant non-human animal,
and
(v) allowing said embryo to develop to term, and
(vi) identifying a genetically altered non-human animal whose genome comprises a modification of said gene sequence in both alleles, and
(vii) breeding the genetically altered non-human animal of step (vi) to obtain a genetically altered non-human animal whose genome comprises a modification of said endogenous gene, wherein said disruption results in said non-human animal exhibiting apredisposition to developing symptoms of a neurodegenerative disease or related diseases or disorders.

Claim 12(original): Use of the recombinant, non-human animal according to claim 11 for screening, testing, and validating compounds, agents, and modulators in the development of diagnostics and therapeutics to treat neurodegenerative diseases, in particular

Alzheimer's disease.

Claim 13(original): An assay for screening for a modulator of neurodegenerative diseases, in particular Alzheimer's disease, or related diseases or disorders of one or more substances selected from the group consisting of
(i) the ABCA 1 gene, and/or
(ii) a transcription product of the ABCA 1 gene, and/or (iii) a translation product of the ABCA 1 gene, and/or (iv) a fragment, or derivative, or variant of (i) to (iii), said method comprising:
(a) contacting a cell with a test compound;
(b) measuring the activity and/or level of one or more substances recited in (i) to (iv);
(c) measuring the activity and/or level of one or more substances recited in (i) to (iv) in a control cell not contacted with said test compound and
(d) comparing the levels and/or activities of the substance in the cells of step (b) and (c), wherein an alteration in the activity and/or level of substances in the contacted cells indicates that the test compound is a modulator of said diseases or disorders.

Claim 14(original): A method of screening for a modulator of neurodegenerative diseases, in particular Alzheimer's disease, or related diseases or disorders of one or more substances selected from the group consisting of (i) the ABCA 1 gene, and/or
(ii) a transcription product of the ABCA 1 gene, and/or (iii) a translation product of the ABCA 1 gene, and/or (v) a fragment, or derivative, or variant of (i) to (iii), said method comprising:
(a) administering a test compound to a test anima! which is predisposed to developing or has already developed symptoms of a neurodegenerative disease or related diseases or disorders in respect of the substances recited in (i) to (iv);
(b) measuring the activity and/or level of one or more substances recited in (i) to (iv);

(c) measuring the activity and/or level of one or more substances recited in (i) or (iv) in a matched control animal which is predisposed to developing or has already developed symptoms of a neurodegenerative disease or related diseases or disorders in respect to the substances recited in (i) to (iv) and to which animal no such test compound has been administered;
(d) comparing the activity and/or level of the substance in the animals of step (b) and (c), wherein an alteration in the activity and/or level of substances in the test animal indicates that the test compound is a modulator of said diseases or disorders.

Claim 15(original): The method according to claim 14 wherein said test animal and/or said control animal is a recombinant animal which expresses a gene coding for ABCA 1, or a fragment, or a derivative, or a variant thereof, under the control of a transcriptional control element which is not the native ABCA 1 gene transcriptional control element.

Claim 16(original): An assay for testing a compound, preferably for screening a plurality of compounds for inhibition of binding between a ligand and an ABCA 1 translation product, or a fragment, or derivative, or variant thereof, said assay comprising the steps of:
(i) adding a liquid suspension of said ABCA 1 translation product, or a fragment, or derivative, or variant thereof, to a plurality of containers;
(ii) adding a compound or a plurality of compounds to be screened for said inhibition to said plurality of containers;
(iii) adding a detectable ligand, preferably a fluorescently labeled ligand to said containers;
(iv) incubating said ABCA 1 translation product, or said fragment, or derivative, or variant thereof, and said compound or compounds, and said detectable, preferably said fluorescently labeled ligand;
(v) measuring amounts of detectable ligand or fluorescence

associated with said ABCA 1 translation product, or with said fragment, or derivative, or variant thereof; and
(vi) determining the degree of inhibition by one or more of said compounds of binding of said ligand to said ABCA1 translation product, or said fragment, or derivative, or variant thereof.

Claim 17(original): An assay for testing a compound, preferably for screening a plurality of compounds to determine the degree of binding of said compounds to an ABCA 1 translation product, or to a fragment, or derivative, or variant thereof, said assay comprising the steps cf:
(i) adding a liquid suspension of said ABCA 1 translation product, or a fragment, or derivative, or variant thereof, to a plurality of containers;
(ii) adding a detectable compound, preferably a plurality of detectable compounds, in particular a fluorescently labeled compound or a plurality of fluorescently labeled compounds to be screened for said binding to said plurality of containers;
(iii) incubating said ABCA 1 translation product, or said fragment, or derivative, or variant thereof, and said detectable, preferably said fluorescently labeled compound or fluorescently labeled compounds;
(iv) measuring amounts of detectable compound or fluorescence associated with said ABCA 1 translation product, or with said fragment, or derivative, or variant thereof; and
(v) determining the degree of binding by one or more of said compounds to said ABCA 1 translation product, or said fragment, or derivative, or variant thereof.

Claim 18(original): A protein molecule shown in SEQ ID NO. 1, or a fragment, or derivative, or variant thereof, for use as a diagnostic target for detecting a neurodegenerative disease, preferably Alzheimer's disease.

Claim 19(original): A protein molecule shown in SEQ ID NO. 1, or a fragment, or derivative, or variant thereof, for use as a screening target for reagents or compounds preventing, or treating, or ameliorating a neurodegenerative disease, preferably Alzheimer's disease.

Claim 20(original): Use of an antibody specifically immunoreactive with an immunogen, wherein said immunogen is a protein molecule shown in SEQ ID NO. 1, or a fragment, or derivative, or variant thereof, for detecting the pathological state of a cell in a sample from a subject, comprising immunocytochemical staining of said cell with said antibody, wherein an altered degree of staining, or an altered staining pattern in said cell compared to a cell representing a known health status indicates a pathological state of said cell.